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DEPARTMENT OF ECOLOGY
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September 18, 2003

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OFFICE OF WASTE & CHEM. MGMT.

Ms. Susan Roth
6236 27th Avenue NE
Seattle, WA 98115-7114

Dear Ms. Roth:

RE: Comments on "Responses to Ecology's Comments on the Draft Bridge Document Report 2 and Ongoing Site Investigation Direction": Terminal 91 Tank Farm Site Agreed Order No. DE 98HW-N108

The Draft Bridge Document Report 2 (BDR2), prepared for the Terminal 91 Site PLP Group (PLP Group) by Roth Consulting, was received by the Department of Ecology (Ecology) on February 3, 2003. This report addresses the portion of the Port of Seattle (POS) Terminal-91 facility where RCRA corrective action is being performed pursuant to the Model Toxics Control Act (MTCA) Agreed Order No. DE 98HW-N108.

The correspondence from the PLP Group that responded to the March 26, 2003, comment letter from Ecology was received on May 19, 2003. Based on your responses, attached are Ecology's comments that will need to be addressed prior to the BDR2 being approved. A revised BDR2 report is not necessary; however, satisfactory responses to these comments must be submitted to Ecology within forty-five (45) days of receiving today's letter.

Some of the May 19, 2003, comments will be addressed directly to the POS in a separate correspondence, since the comments are directed at the upland Voluntary Cleanup portion of the ongoing investigation. At some point, the PLP Group and the POS, conducting the upland investigation, will need to integrate all portions of the investigation that apply to the "Facility" (as defined by RCRA) into a comprehensive site model.

Thank you for your May 19, 2003, submittal. If you have any questions concerning this letter, or would like to schedule a meeting to resolve comments, please contact me at the Department of Ecology Northwest Regional Office by phone at (425) 649-7280 or by email at gtri461@ecy.wa.gov.

Sincerely,

Galen H. Tritt
Hazardous Waste and Toxics Reduction Program

GHT:ct
Enclosure
cc: Julie Sellick, Ecology-NWRO
Ed Jones, Ecology-NWRO
Greg Caron, Ecology-CRO
Jan Palumbo, EPA Region 10 ✓
HZW File 6.2

USEPA RCRA
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ATTACHMENT

Ecology's Responses to the PLP Group May 19, 2003, Response Letter
(Format in following order: Ecology's original comment, PLP Group's responses, and new responses by Ecology)

General Comments

1. The revision of the BDR2 should propose answers to the following:

   - What facets of groundwater (GW) characterization still need to be explored? Before moving to complete the RI/FS?

   - What assumptions or hypotheses about the nature and extent of GW contamination need to be tested prior to submitting the RI/FS Report?

   These issues were introduced in the Draft BDR2 recommendations (Section 4.0, page 27) and were further developed in the Draft WPADC that was submitted to Ecology on March 31.

   Ecology: It would have been helpful if the PLP Group could have listed/summarized these in the BDR2 more clearly. Neither the bulleted recommendations nor your response to our comment offer enough detail on how you plan to move forward with the site characterization, or in which stage of the BDR work that these comments will be addressed. Please list and summarize in more detail your response.

2. The BDR2 should state whether the PLPs believe human health risks associated with the site are currently acceptable. If you believe they are not, or if not enough is known yet to answer this question, the report should identify the exposure and migration pathways of (potential) concern. Then, taking these human health pathways one by one, the report should describe the critical data gaps that the monitoring and investigation program must fill prior to completing the RI/FS.

   The PLP Group has not yet conducted a risk assessment, so risks have not yet been comprehensively determined for the site. However, the PLP Group has created a conceptual site model for pathways associated with the site and has begun a separate soil vapor pathway analysis, which provides some initial risk calculations. As discussed further in the PLP Group's responses to Ecology's specific comments below, and as we discussed in our meeting on April 4, the preliminary identification of exposure pathways was performed and reported in BDR1, and the potentially complete pathways were identified. The ***soil to vapor pathway*** *was identified in BDR1, and further investigations have been performed as described in the Draft SVTM2. As stated in the Draft BDR2 (page 4, first paragraph), the focus of the BDR2 work was on the remaining ground water to surface water pathway that was identified in BDR1. The PLP Group is in the process of responding to Ecology's comments regarding the Draft SVTM2, and potential risks associated with the soil to vapor pathway are being addressed as part of that document. The Draft BDR2 identified the data gaps that exist with respect to the* ***ground water to surface water pathway****, and those data gaps are being addressed under the Draft WPADC that has now been reviewed by Ecology. The PLP Group also is in the process of preparing responses to Ecology's comments on the Draft WPADC.*

   Ecology: Our comment asked for a "hypothesis" concerning the current Human Health risks associated with this site. This is an Environmental Indicator question, and does not require a quantitative risk assessment to answer. Please indicate your "hypothesis" concerning Human Health risks associated with this site at present.

3. The BDR2 should present a hypothesis about current and future levels of risk potentially posed by contaminated surface water and sediments to ecological receptors. The exposure and migration pathways of concern should be identified, and associated data gaps that the PLPs intend to fill prior to completing the RI/FS should be proposed.

   Levels of risk will be addressed in the risk assessment for the site. Exposure and migration pathways of concern were identified in the BDR1. Data gaps are being addressed as part of the SVTM2 and BDR2/WPADC work.

   Ecology: Again, as in #2, our comment asked for a "hypothesis" concerning current risk associated with this site. It is understood that the RI risk assessment will refine, or possibly even refute, any preliminary hypotheses. However, Ecology needs to estimate risks throughout the corrective action process so that if potential site risks are indeed likely to be unacceptable, the parties could immediately begin considering interim measures.

4. Data to determine seasonal variation in water levels and COPCs at the site have been collected in the past. The BDR2 should hypothesize what the likely trends/patterns are, if any, and in so doing, identify what the outstanding data gaps are (in terms of characterizing seasonal variations).

   The PLP Group has not proposed any changes to the ground water sampling frequency. Ecology approved the semiannual sampling in 1999, based on rationale provided in letters sent to Ecology on June 2 and September 17, 1999. Annual ground water monitoring reports, submitted to Ecology in June of each year, do provide seasonal analysis of water levels and chemical concentrations. This was not part of the scope of the BDR2 work.

   Ecology: Thank you. No further response from the PLP Group on this subject is needed at this time. (*Note for future consideration: In order to approve the RI Report, Ecology will need to conclude that groundwater has been adequately characterized. This includes temporal characterization.*)

5. No monitoring objectives were provided in the SAP for assessing background contributions to groundwater. Since achieving consensus on the determination of background values, as well as the use of those values, can be contentious, the BDR2 or a separate work plan should propose the methodology for determining background and indicate how, specifically, the values will be used in the RI/FS.

   Noted. As you know, the PLP Group will be providing a technical memorandum to Ecology in the next few months describing the PLP Group's proposed approach to evaluating background concentrations of metals in ground water.

   Ecology: Thank you.

6. Since it has been over four years since the "RIDE" report was submitted, Ecology prefers that the PLP's final RI report be a document that includes both the still-relevant aspects of the "RIDE" and the results of the BDR work, combined. This document should follow the requirements of MTCA established under WAC 173- 340 for presenting the RI/FS. The FS portion of this process can be described in terms of a schedule of when the FS will be delivered.

   As we discussed in our meetings on March 28 and April 4, the PLP Group already has prepared a Draft Remedial Investigation and Data Evaluation ("RI/DE Report") under MTCA and the Agreed Order, and Ecology has agreed to the Bridge Document concept for "bridging" the data gap process between the RI and the FS. At the January 28 and April 4 meetings, Ecology and PLP representatives discussed several possible ways of addressing this issue, not all of which included the preparation of a new RI document. The PLP Group would like to meet with Ecology and discuss the various proposals for the RI document further. The Agreed Order contains requirements and schedule for an FS Work Plan and an FS Report.

   Ecology: This will need to be determined in the future. The original "RI/DE Report" will not be reviewed in its current form. Ecology is open to suggestions for revising this document, and suggests that the document be returned to the PLP Group to edit/revise, and then resubmitted once the Bridge Document work has been completed.

Specific Comments

1. Page 2 second paragraph refers to "the Pier 89/90 slip." Is this correct or should it be the Pier 90/91 slip?

   Pier 89/90 is correct.

   Ecology: Thank you for the clarification.

2. Pages 4 and 5. Point of clarification: The document states that the vapor intrusion investigation confirmed no unacceptable risk to site workers. Ecology has yet to concur with that conclusion. Unless Ecology concurs with the PLP's position, the revised BDR2 should appropriately qualify the statement so that it is clear that this is only the PLP's conclusion.

   Noted. This issue is being addressed as part of the SVTM2 work.

   Ecology: The response does not satisfactorily address the comment. Even though it is true that "this issue is going to be addressed by the SVTM2," the conclusion has yet to be approved and should be stated as simply the PLP Group's position.

3. Page 4. Point of clarification: The text states that the primary pathway of concern is "the groundwater to surface water pathway." Ecology concurs that this is the primary COPC *migration* pathway of concern. The primary exposure pathways of concern appear to be:

   - Ecological receptors exposed to contaminated surface water
   - Ecological receptors exposed to contaminated sediments
   - Humans and ecological receptors exposed to contaminants by ingesting ecological receptors exposed to contaminated media

   The BDR should be revised to include these exposure pathways.

   The BDR1 provided more detail on exposure pathways, as stated on p. 5 of the Draft BDR2, and the risk assessment will further address exposure pathways. The primary purpose of the BDR2 was to identify data gaps associated with the site-specific potential exposure pathways and potential cleanup alternatives, also stated on p. 5 of the Draft BDR2.

   Regarding Ecology's first and third bullets: The Draft BDR2 acknowledged data gaps existed with respect to uncertainty regarding the potential for contaminated surface water, and these data gaps are being addressed under the WPADC.

   Regarding Ecology's second bullet: As the PLP Group has stated previously in emailed responses to Ecology's preliminary comments on the Draft BDR1, the Draft BDR1 recognized that the ground water to surface water pathway remains "open" and will require further investigation. Ecology's draft comments on the Draft BDR1 (and the Draft BDR2) (regarding sediments) jump ahead of the existing process and suggest that the marine sediments should be investigated. It is premature at best to conclude that the current investigation should now be expanded to include marine sediments. Data gathered to date do not demonstrate that chemicals from the site have been released to the surface water. Therefore, the PLP Group believes that our investigation should continue to focus on the ground water to surface water pathway. If those investigations determine that the surface water has been affected, then it may be appropriate to consider possible impacts to associated sediments.

   The PLP Group objects to any expansion of the T91 Tank Farm Site investigation to include marine sediments. Besides being premature, characterization of the sediments under the Agreed Order is inappropriate because the marine sediments near T91 have likely been impacted by a host of direct discharges and incidental releases from a wide variety of sources that are not related to the T91 Tank Farm Site. In comparison, it seems highly unlikely that the ground water from T91 has had a significant impact on marine sediments, particularly when we have yet to establish any impact on surface waters. For example, direct discharge sources include the City of Seattle's 92-inch storm drain/CSO discharge and the City's 44-inch storm drain that historically received and then discharged contaminants from numerous sources, including the City's truck disposal station just north of T91. Contaminants from such discharges might be expected to include metals, oils, polychlorinated biphenyls ("PCBs"), polynuclear aromatic hydrocarbons ("PAHs"), and other priority pollutant compounds.

   Regarding Ecology's third bullet: The risk assessment will address these receptors as relevant.

   Ecology: Thank you. The PLP's response addresses the comment satisfactorily, as it relates to the Tank Farm Site. This issue will be discussed further in a correspondence directed to the POS as the responsible party for the Upland voluntary cleanup investigation.

4. Page 6. Point of clarification: Section 2.1 states that BDR1 identified a COPC list, based on GW detections from 4/98 to 2/00. This is true, but it should be clarified in the document's revision that this list is a list of chemicals that could be a concern for:

   - Ecological receptors currently exposed to surface water contaminated by these chemicals via GW discharge
   - Ecological receptors exposed to surface water contaminated by these chemicals (via GW discharge) in the future
   - Ecological receptors exposed, in the future, to sediments contaminated by these chemicals via GW discharge to surface water
   - Humans and ecological receptors exposed to contaminants in the future by ingesting ecological receptors exposed to media contaminated by GW discharge

   The reason it is helpful to keep these specific pathway linkages clear is that while detections of constituents in GW from 1998 on should be included on any *site* COPC list, they are unlikely to be the only COPCs we need to account for. For example, Ecology and the PLPs have the additional RI/FS task of assessing:

   - Ecological receptors already exposed to sediments, contaminated by chemicals discharged to surface water via GW in the past (before '98)
   - Humans and ecological receptors currently exposed to contaminants by ingesting ecological receptors exposed to media contaminated by historic GW discharge
   - Humans and ecological receptors exposed to contaminants in the future by ingesting ecological receptors exposed to media contaminated by historic GW discharge

   The BDR1 and BDR2 COPC lists, therefore, may not include constituents that were present in GW prior to monitoring, and have subsequently entered surface water and contaminated sediments. This should be acknowledged in the report.

   Potential receptors were described in the BDR1 and will be further elaborated in the risk assessment (see also our responses to your comment 3 above). Regarding historic discharges, the PLP Group does not agree that this PLP Group should be responsible for identifying historic contributors to potential sediment concentration (see also our response to your comment 3 above).

   Ecology: Thank you. The PLP's response addresses the comment satisfactorily, as it relates to the Tank Farm Site. This issue will be discussed further in a correspondence directed to the POS as the responsible party for the Upland voluntary cleanup investigation.

5. Page 7. While it is fairly obvious why newly detected constituents (in GW) should be added to the COPC list, it is less clear why it is appropriate to remove the 26 chemicals detected in the past, which have not been detected over the past two years. Ecology agrees that their "absence" implies that GW discharges no longer carry significant levels of these chemicals to surface water and sediments, but as noted above, their presence in samples historically suggests a concern for loading to sediments in the past. The PLPs should make it clear in the revised report what specific exposure/migration pathways will be assessed by the results obtained from GW monitoring using the presented analyte list.

As stated on page 7 of the Draft BDR2, the 26 chemicals were removed from the list because the original COPC list provided in BDR1 Table 1 was considered suspect because that list was generated using data that was considered to be of suspect quality and not recommended for use for decision making purposes. The list was of particular interest because of the concern that the pre-2000 data were likely to have contained false positives. Also see our responses to Ecology's specific comments 3 and 4 above regarding exposure pathways.

Ecology: Although the old groundwater data may have more uncertainty associated with it, we consider it likely that many of the constituents detected previously may actually have been in the groundwater samples at that time. The rationale for allowing these constituents to fall off the groundwater monitoring analyte list now is that they do not seem to be present above detection limits any longer. The PLP's response satisfactorily addresses the comment as it relates to continued monitoring of groundwater at the Tank Farm Site. However, this issue will be discussed further in a correspondence directed to the POS as the responsible party for the Upland voluntary cleanup investigation

6. Section 2.4.1 and the related figures. What is the most recent data from the "short fill" monitoring wells and how do the PLPs plan to incorporate this information into your overall site assessment? Can you address how this information is relevant (or show that it is not relevant) to the site investigation work?

Most of the short fill monitoring wells have not been used for ground water sampling since 1992, when they were used to demonstrate successfully to EPA and Ecology that POS's short fill structure met the agencies' performance criteria as outlined in the Criteria, Thresholds, Monitoring and Remedial Action Plan ("CTMRAP") that was developed by the POS in cooperation with Ecology. The CTMRAP addressed both surface water quality and adequate confinement and containment of the dredged material that was emplaced as the short fill. The short fill, together with most of the short fill wells, appears to be separated from the piers by bulkheads. This issue (i.e., bulkhead construction) will be further addressed as part of the work described in the Draft WPADC.

Ecology: Thank you.

7. Page 12, Section 2.4.2.1. This section discusses the "anomaly" at MW GP-02. Considering that a 1920 gasoline tank and pump were located close to this location, the results from sampling this well may not be so unexpected. It would also indicate that additional work would need to be considered on Pier 90.

   Provide for additional data collection within the future work plan to address this area of concern.

As discussed in our meeting on March 28, the reported 1920 gasoline tank and pump that was shown on the Figure 16 of the Draft BDR2 is outside the Tank Farm Lease Parcel. Therefore, any potential releases from that potential historical source would not be addressed as part of the Tank Farm Site investigation.

Ecology: Thank you. The PLP's response addresses the comment satisfactorily, as it relates to the Tank Farm Site. This issue will be discussed further in a correspondence directed to the POS as the responsible party for the Upland voluntary cleanup investigation.

8. Page 16, Section 2.4.2.12&13. In the discussion of background levels for chromium and lead on this page, the report appears to jump to premature conclusions. Background levels of these metals have yet to be established. Please change your conclusion to reflect your proposals for background determination.

The PLP Group does not agree that the report jumps to premature conclusions. The findings regarding chromium and lead were well qualified. For example, regarding chromium in the Shallow Aquifer, the report did not state "Those concentrations exceed the background chromium level of 15.2 ug/L at the site." The report qualified the results stating, "Those concentrations exceed the highest Shallow Aquifer background concentration of 15.2 ug/L detected in well CP-106A during the last three years." Since background levels of these metals have not been established, the report simply provided some observations that are correct and do not appear to be misleading. Accordingly, the BDR2 has not been revised. Also, Ecology is now aware that the PLP Group plans to provide a proposal to Ecology within the next few months regarding an approach to evaluating background concentrations of metals in groundwater at the site (see Draft WPADC).

Ecology: As noted above, the report used the word "background." Until area and natural background have been established per MTCA for this site, more technical terms such as up or cross gradient are preferable. No additional response to our comment is requested of the PLPs.

9. Page 18. Section 2.4.3 discusses the PAH concentrations that are higher outside of the lease parcel. This data would appear to indicate that AOC 9 and AOC 11 have contributed to the plume concentrations from the lease parcel and warrant further investigation. Provide additional discussion on the commingling of contamination plumes from these AOCs.

AOC 9 and AOC 11 are not associated with the Tank Farm Lease Parcel, but are being investigated by the POS as part of the T91 Upland independent cleanup being performed by the POS under the Voluntary Cleanup Program ("VCP") and overseen by Ecology. In fact, the POS installed wells GP-03 through GP-06 as part of the T91 Upland work, and the Tank Farm Site PLP Group is using the wells for its semiannual ground water monitoring program. As we discussed in our meeting on March 28, the overall strategy for the Tank Farm Site and the T91 Upland has been to focus the investigation only on potential receptors, which would be those impacted by migration primarily along the ground water to surface water pathway. The PLP Group recognizes the likelihood of the possibility of commingled plumes, but does not consider that they warrant additional discussion or further investigation under the groundwater to surface water pathway scenario.

Ecology: Thank you. The PLP's response addresses the comment satisfactorily, as it relates to the Tank Farm Site. This issue will be discussed further in a correspondence directed to the POS as the responsible party for the Upland voluntary cleanup investigation.

10. Pages 18 and 19. The text states that the variability in metals concentrations across the site suggests "regional variability in background concentrations…" Upgradient spatial variability is certainly possible, but this would not by itself account for the lack of a pattern to concentrations along flow lines. If upgradient metals concentrations are relatively stable/steady state, though they are variable over distance perpendicular to flow lines, we should expect that downgradient concentrations should show the same patterns. Since this is not the case, a data gap for the RI seems to be to discover the cause of this site-wide variability 2. As noted above, proposals for determining and using background concentrations of COPCs should either be included in the revised report or presented in a separate work plan.

Noted. As you know, the PLP Group will be providing a technical memorandum to Ecology in the next few months describing the PLP Group's proposed approach to evaluating background concentrations of metals in ground water.

Ecology: The response satisfactorily addresses the comment.

11. Page 27. Here, the PLPs provide "Recommendations for Additional Work." Bullets 1, 3, 5, and 6 appear reasonable. Please revise this section to include information that addresses comments on the other bullets. It should be noted that:

a) It is not yet known whether well CP-103B is providing representative GW samples until it is replaced. Ecology's assumption for now is that it is. A new well should be located close to 103B's location.

Ecology's comment regarding CP-103B is noted, and the location for the new well was proposed in the Draft WPADC. The need for revision of the Draft BDR2 recommendations on this point is unclear.

Ecology: The report should simply have stated that we suspect CP103B may not be giving us representative samples. No further response to Ecology's comment is required.

b) The future RI/FS Report will focus on the site's COPCs, and narrow this list to the COCs that the FS must consider in evaluating potential remedies. It is worthwhile to continue screening exposure pathways to determine if the pathways are viable; and if they are, which COPCs could be responsible for unacceptable risk/harm. For the following exposure pathways, it appears to Ecology that the PLPs are making the noted progress:

- Ecological receptors currently exposed to surface water contaminated by chemicals via GW discharge: good progress focusing on the COPCs. What progress has there been related to identifying the marine eco receptors of concern?

The surface water pathway has not been determined to be complete at this time; therefore, research into various surface water and sediment pathways and receptors is premature at this time. The scope of the BDR2 work, and work proposed in the WPADC, in part, is to determine if the surface water pathway is complete and if so, how great the impact is to surface water. The results of this work will also be used in the future to determine if any potential surface water impacts could cause sediment impacts.

Ecology: The Department assumes that the GW-to-SW pathway is "complete." The groundwater is moving off site to surface water, carrying some levels of COPCS. The discharge points, rates, and COPC levels at those points can only be estimated at this time.

It may be possible to conclude that the contaminant levels in SW water column, contributed by GW, are associate with acceptable risk at some point, but the connection between the two is no mystery as shown by your tidal studies.

Regarding receptors: If we do not know which receptors are likely to be present in the SW, how do we know if the contaminants being discharged are at acceptable levels or not? Do the PLPs believe that the water quality criteria screening values you are using are protective of all receptors that could be in this environment? Please clarify your position in your response.

- Ecological receptors exposed to surface water contaminated by chemicals (via GW discharge) in the future: good progress focusing on the COPCs. Is it likely/possible that the eco receptors of concern in the future will be different than those we focus on now?

- Ecological receptors exposed, in the future, to sediments contaminated by chemicals via recent/future GW discharge to surface water: good progress focusing on the COPCs.

- Humans and ecological receptors exposed to contaminants in the future by ingesting ecological receptors exposed to media contaminated by recent/future GW discharge: good progress focusing on the COPCs.

  What progress has there been in identifying the types of eco receptors that would be harvested by humans?

- Ecological receptors already exposed to sediments, contaminated by chemicals discharged to surface water via GW in the past (before '98): What progress has there been related to identifying the COPCs and marine eco receptors of concern?

- Humans and ecological receptors currently exposed to contaminants by ingesting ecological receptors exposed to media contaminated by historic GW discharge: As noted above, what progress has been made? Related to identifying COPCs and those eco receptors which would be harvested and consumed by humans?

- Humans and ecological receptors exposed to contaminants in the future by ingesting ecological receptors exposed to media contaminated by historic GW discharge: {similar data/information needs as the preceding scenario}

- Humans and ecological receptors exposed in the future to contaminants currently in soils, which leach into GW and eventually discharge into surface water: What progress has there been related to identifying COPCs, source areas of concern, source mass terms, and the approach to modeling soil-to-GW contamination?

For these seven bulleted comments, please refer to the PLP Group response to the previous bulleted comment.

Ecology: Please refer to Ecology's comment on the PLP's response to bullet #1. In addition, this issue will be discussed further in a correspondence directed to the POS as the responsible party for the Upland voluntary cleanup investigation.

c) As noted previously, an effort to determine background concentrations of metals found in on-site GW, at levels exceeding CULs, should be included in the BDR or made the subject of a new work plan. As part of this activity it may be informative to "research" GW concentrations upgradient of the site, but the tasks associated with the background determination effort should be the product of following the *DQO* process and linking data collection with specific uses of the data.

Noted. As you now know, the PLP Group will be providing a technical memorandum to Ecology in the next few months describing the PLP Group's proposed approach to evaluating background concentrations of metals in ground water.

Ecology: Thank you.

d) An effort to determine bulkhead-area GW flow direction and possible locations of discharge to GW should be the subject of the March 31 Plan. It is expected that the effort will entail direct-push GW sampling, to be followed by permanent well placements at selected locations. The particular tasks associated with this activity, however, should be the product of following the *DQO* process and linking data collection with specific uses of the data.

Noted, although as you now know (see Draft WPADC), the plans for direct push sampling have been replaced with plans for temporary monitoring well sampling because of the need for temporary wells that can also function adequately for tidal monitoring.

Ecology: The PLPs' response should reflect how this work was actually done.

e) It would be helpful to know the history of the bulkheads. The various bulkheads have been built at different times and using different materials. Knowing when certain bulkheads were constructed in association with historical information on both the Tank Farm Site and the additional Upland AOCs could shed light on whether or not contamination could have reached the surface water or sediments.

Noted. As you know, a review of bulkhead construction information is part of the work described in the Draft WPADC.

Ecology: Thank you.

12. Figure 16. Ecology and the PLPs should discuss how and when the AOCs and other potential source areas on this figure would be dealt with in the RI/FS Report. It would be helpful if a brief description of when the PLPs expect to integrate the AOC information into the site assessment was made in the BDR2 report.

As we discussed in our meeting on March 28, the AOCs and other potential source areas shown on Figure 16 are not within the Tank Farm Lease Parcel and therefore are not subject to corrective action under the Agreed Order. These areas are part of the T91 Upland independent cleanup activities being performed under the VCP with Ecology oversight. See also the PLP Group's responses to Ecology's specific comment 9 above.

Ecology: Thank you. The PLP's response addresses the comment satisfactorily, as it relates to the Tank Farm Site. This issue will be discussed further in a correspondence directed to the POS as the responsible party for the Upland voluntary cleanup investigation.

13. Table 3. Like Tables 1 and 2, this table contains good information, and was a good addition to the document. As noted above, however, the PLPs need to be careful about terminology in the revised, and future, reports when referring to the site's COPCs. GW constituent levels below screening levels presently do not, by themselves, indicate that offshore sediments have not been unacceptably contaminated in the past.

Noted.

Ecology: Thank you.

Response to comments on BDR1 (November 21, 2001)

Ecology does not agree with the assessment of the PLPs and recommends that a sample and analysis for EPH/VPH be considered at least once near the seafood processing building. This information can then be used to screen-out a petroleum (fraction) concern via vapor intrusion. To the extent that there are no other ground water related exposure pathways (other than groundwater contaminating surface water and sediments), it is likely that additional EPH/VPH analyses would not be needed.

This comment also was provided on the Draft SVTM2, and the PLP Group will provide its reply to this comment in its responses to Ecology's comments on that document.

Ecology: Thank you.

Even though there are no published bio-concentration factors for TPH constituents, this does not exclude the possibility of the need for a future Whole Effluent Toxicity (WET) testing. This WET testing on representative groundwater discharging to Elliot Bay could still be required under WAC 173-340-730(3)(b)(ii), so it should not be discounted at this point of the investigation. This should be discussed or acknowledged in the PLP's response to Ecology's comments on BDR2.

Noted. The PLP Group is aware of the need to demonstrate, for hazardous substances for which environmental effects-based concentrations have not been established under applicable state or federal laws, that concentrations do not exceed those estimated to result in no adverse effects on the protection and propagation of wildlife, fish, and other aquatic life. However, the regulation does not require WET testing, it only allows that WET testing may be used to make this demonstration for fish and aquatic life. The PLP Group will address this issue during the risk assessment process.

Ecology: The response satisfactorily addresses the comment, but the demonstration should not wait until the risk assessment is prepared. This should be an RI task that is done before the ecological risk assessment is prepared (and submitted). Please indicate at what point in the investigation schedule prior to the submittal of the risk assessment, that a demonstration (not necessarily the WET test) will be conducted.